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11. (Thrice Amended) A method of making a spatially-addressable combinatorial array of at least 500 different compounds in solution in multiple cycles, said method comprising the steps of:

(a) apportioning into a plurality of reaction vessels that are identifiable by their spatial addresses (i) a first plurality of [compounds] reactants, each [compound in the first plurality of compounds] comprising a same first reactive group and a different first structural diversity element such that the [compounds] reactants composing the first plurality differ from one another, with one first [compound] reactant per reaction vessel; and (ii) a second [compound] reactant comprising a second reactive group and a second structural diversity element, with one second [compound] reactant per reaction vessel;

(b) concurrently reacting said first and second [compounds] reactants in each of the plurality of reaction vessels under solution phase conditions wherein each of the first and second reactive groups react with one another by an addition reaction to form a compound; and

(c) repeating steps (a) and (b), thus forming the combinatorial array of at least 500 different compounds in solution;

wherein each compound composing the combinatorial array comprises a same common linear, branched, or cyclic molecular core comprising at least three atoms of carbon, nitrogen, oxygen, phosphorus or sulfur having the first and second structural diversity elements attached thereto, and further wherein the compounds composing the array differ from one another by at least one change in a structural diversity element.

24. (Amended) The method of claim 22 wherein for each cycle the reagents in at least 80 different reaction vessels are concurrently reacted [per cycle].

Please cancel claim 3.

### REMARKS

Applicants appreciate the courtesies extended by Examiner Ponnaluri to applicants' representatives, Allan Fanucci, Ian Scott and Mark Russett during a telephonic interview on February 29, 2000. At the interview, the outstanding rejections of the claims